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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,276	11/20/2003	Phuong-Nghi Lam	Q169-US1	3190

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EXAMINER	
YUAN, DAH WEI D	
ART UNIT	**PAPER NUMBER**
1745	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/13/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/719,276	LAM ET AL.	
	Examiner	Art Unit	
	Dah-Wei D. Yuan	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 February 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5,7-22,24,25 and 27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5,7-9,12-22,24,25 and 27* is/are rejected.

7)☒ Claim(s) *10 and 11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

PRIMARY BATTERY HAVING SECONDARY REACTION

Examiner: Yuan S.N. 10/719,276 Art Unit: 1745 April 11, 2007

Detailed Action

1. The Applicant's amendment filed on June 14, 2001 was received. The title of the invention was changed. Claims 4,6,23,26 were cancelled.

2. The text of those sections of Title 35, U.S.C. code not included in this action can be found in the prior Office Action issued on November 28, 2006.

Claim Rejections - 35 USC § 102

3. The claim rejections under 35 U.S.C. 102(e) as anticipated by Munshi et al. on claims 1-3,5,7,8,13-17,19-22,24,27 are withdrawn, because applicant's arguments are persuasive.

3. The claim rejections under 35 U.S.C. 102(b) as anticipated by Skotheim on claims 1,5,8,12-22,27 are withdrawn, because applicant's arguments are persuasive.

Claim Rejections - 35 USC § 103

4. The claim rejections under 35 U.S.C. 103(a) as unpatentable over Munshi et al. as applied to 1-3,5,7,8,13-17,19-22,24,27 above, and further in view of Schmidt et al. on claim 25 are withdrawn, because applicant's arguments are persuasive.

5. The claim rejections under 35 U.S.C. 103(a) as unpatentable over Skotheim as applied to 1,5,8,12-22,27 above, and further in view of Tadeuchi et al. on claim 9 are withdrawn, because applicant's arguments are persuasive.

6. Claims 1-3,5,7,8,13-17,19-22,24,27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Munshi et al. (2003/0211383 A1) in view of Smesko et al. (US 5,716,728).

With respect to claims 1-3,5,7,8,13-17,20-22,24,27, Munshi et al. teach a primary lithium battery comprising a lithium anode, a CF_x (fluorinated carbon) cathode and a non-aqueous electrolyte comprising lithium bis(oxalato)borate. See paragraphs 20,24. Munshi et al. do not specifically disclose the component having a decomposition voltage of between about 1 V and the battery discharge voltage, the battery discharge voltage being higher than 1 V and the actual capacity of the battery. However, it is the position of the examiner that such properties are inherent, given that both Munshi et al. and the present application utilize the same chemistry in the battery. A reference which is silent about a claimed invention's features is inherently anticipatory if the missing feature *is necessarily present in that which is described in the reference.* In re Robertson, 49 USPQ2d 1949 (1999).

However, Munshi et al. do not disclose the total capacity of cathodes is less than the total capacity of the anodes in the battery. Smesko et al. teach an alkali metal electrochemical cell, wherein the anode-to-cathode capacity ratio of about 1.03 such that the energy density and gravimetric energy of the battery are improved. See abstract, Column 1, Lines 57-67; claim 1. Therefore, it would have been obvious to one of ordinary skill in the art to have one or more

cathodes having a total capacity less than the total capacity of the one or more anodes in the battery of Munshi, because Smesko et al. teach the resulting energy density and gravimetric energy of the battery can be improved.

With respect to claims 19, Munshi et al. teach the use of polyethylene oxide as the electrolyte. See paragraph 26.

7. Claims 1,5,8,12-22,27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skotheim (US 5,462,566) in view of Smesko et al. (US 5,716,728).

With respect to claims 1,5,8,12-17,20-22,27, Skotheim et al. teach a primary lithium battery comprising a lithium anode, a carbon cathode and a non-aqueous electrolyte comprising carbon disulfide. See Column 6, Lines 16-26. Skotheim does not specifically disclose the component having a decomposition voltage of between about 1 V and the battery discharge voltage, the battery discharge voltage being higher than 1 V and the actual capacity of the battery. However, it is the position of the examiner that such properties are inherent, given that both Skotheim and the present application disclose the same chemistry in the battery. A reference which is silent about a claimed invention's features is inherently anticipatory if the missing feature *is necessarily present in that which is described in the reference.* In re Robertson, 49 USPQ2d 1949 (1999).

However, Munshi et al. do not disclose the total capacity of cathodes is less than the total capacity of the anodes in the battery. Smesko et al. teach an alkali metal electrochemical cell, wherein the anode-to-cathode capacity ratio of about 1.03 such that the energy density and

gravimetric energy of the battery are improved. See abstract, Column 1, Lines 57-67; claim 1. Therefore, it would have been obvious to one of ordinary skill in the art to have one or more cathodes having a total capacity less than the total capacity of the one or more anodes in the battery of Munshi, because Smesko et al. teach the resulting energy density and gravimetric energy of the battery can be improved.

With respect to claims 18, Skotheim et al. teach addition of propylene carbonate in the polymer electrolyte. See Column 4, Lines 59-67.

With respect to claims 19, Skotheim et al. teach the use of polymer electrolyte. See Column 6, Lines 16-26.

8. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Munshi et al. (2003/0211383 A1) and Smesko et al. (US 5,716,728) as applied to 1-3,5,7,8,13-17,19-22,24,27 above, and further in view of Schmidt et al. (US 2002/0183800 A1).

Munshi et al. and Smesko et al. disclose a primary battery as described above in Paragraph 6. However, Munshi and Smesko do not disclose the one or more cathodes include vanadium oxide. Schmidt et al. teach a primary battery, wherein a hybrid CF_x-vanadium oxide is used as the cathode active material to yield high energy density and high discharge rate. See paragraphs 6,46,75 and claim3. Therefore, it would have been obvious to one of ordinary skill in the art to add vanadium oxide onto the cathode of Munshi and Smesko, because Schmidt et al. teach the use of hybrid CF_x-vanadium oxide electrode to achieve high energy density and high discharge rate.

9. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Skotheim (US 5,462,566) and Smesko et al. (US 5,716,728) as applied to claims 1,5,8,12-22,27 above, and further in view of Tadeuchi et al. (US 5,874,184).

Skotheim et al. and Smesko et al. disclose a primary battery as described above in Paragraph 7. However, Skotheim and Smesko do not disclose the one or more compounds selected from the group consisting of vinylene carbonate and vinyl ethylene carbonate. Takeuchi et al. teach a polymer electrolyte battery, wherein the cathode comprises lithium or lithium alloy and the anode comprises a carbon material. The organic compound that can be added as a plasticizer in the solid polymer electrolyte includes ethylene carbonate, propylene carbonate, diethyl carbonate and vinylene carbonate. See Column 7, Lines 59-65; Column 20, Lines 30-51. Evidently, ethylene carbonate, propylene carbonate, diethyl carbonate and vinylene carbonate are considered functionally equivalent plasticizer for the polymer electrolyte. Therefore, it would have been obvious to one of ordinary skill in the art to substitute vinylene carbonate for the propylene carbonate in the polymer electrolyte disclosed by Skotheim and Smesko.

Allowable Subject Matter

10. Claims 10,11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 10 would be allowable because the prior art does not disclose or suggest the component is selected form the group consisting of lithium cyclopentadienide and

lithium tetramethylcyclopentadienide. Claim 11 would be allowable because the prior art does not disclose or suggest the compound includes vinyl sulfolane.

Response to Arguments

11. Applicant's arguments filed on February 26, 2007 have been fully considered but they are not persuasive.

Applicant's principal arguments are

Skotheim teaches secondary batteries, however, applicant is claiming primary batteries.

In response to Applicant's arguments, please consider the following comments.

Secondary (rechargeable) batteries can be used as primary (non-chargeable) batteries if the batteries are not subject to recharging.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dah-Wei D. Yuan whose telephone number is (571) 272-1295. The examiner can normally be reached on Monday-Friday (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dah-Wei D. Yuan
April 11, 2007

DAH-WEI YUAN
PRIMARY EXAMINER